

Laboratory Report Number: L13101691

Mark Lyon
Environmental Waste Solutions
2440 Louisiana Blvd
Albuquerque, NM 87110

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on November 13 2013



David Vandenberg – Managing Director

State of Origin: NM
Accrediting Authority: N/A ID:N/A
QAPP: DOD Ver 4.1 without flagging



Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

| Discrepancy | Resolution |
|-------------|------------|
|-------------|------------|

Coolers

| Cooler # | Temperature Gun | Temperature | COC # | Airbill # | Temp Required? |
|----------|-----------------|-------------|-------|------------------------------------|----------------|
| 0018240 | I | 0.0 | | 1002241113760004575000804334337640 | X |

Inspection Checklist

| # | Question | Result |
|----|--|--------|
| 1 | Were shipping coolers sealed? | Yes |
| 2 | Were custody seals intact? | Yes |
| 3 | Were cooler temperatures in range of 0-6? | Yes |
| 4 | Was ice present? | Yes |
| 5 | Were COC's received/information complete/signed and dated? | Yes |
| 6 | Were sample containers intact and match COC? | Yes |
| 7 | Were sample labels intact and match COC? | Yes |
| 8 | Were the correct containers and volumes received? | Yes |
| 9 | Were samples received within EPA hold times? | Yes |
| 10 | Were correct preservatives used? (water only) | Yes |
| 11 | Were pH ranges acceptable? (voa's excluded) | Yes |
| 12 | Were VOA samples free of headspace (less than 6mm)? | NA |

Lab Report #: L13101691

Lab Project #: 3005.011

Project Name: White Sands MR

Lab Contact: Stephanie Mossburg

Samples Received

| Client ID | Laboratory ID | Date Collected | Date Received |
|---------------|---------------|------------------|------------------|
| HTA 51-1013-1 | L13101691-01 | 10/25/2013 09:55 | 10/26/2013 09:31 |
| HTA 43-1013-1 | L13101691-02 | 10/25/2013 11:45 | 10/26/2013 09:31 |



Login Number: L13101691
Department: General Chromatography
Analyst: John W. Richards Jr.

METHOD

Analysis SW-846 6850

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: Samples 01 and 02 were analyzed at dilutions based on screening results.

Internal Standards: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 74087

Approved By: Mike Cochran





Login Number: L13101691
Department: General Chromatography
Analyst: Eric Lawson

METHOD

Analysis SW-846 8330

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group.

SAMPLES

Samples: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

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Narrative ID: 74179

Approved By: Mike Cochran





Login Number: L13101691
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 353.2/SM4500-NO3 F (Nitrate)

HOLDING TIMES

Sample Analysis: The instrument used for the analysis of nitrate only analyzes for nitrate-nitrite (NO₃NO₂) which is the amount of total nitrate (NO₃) and nitrite (NO₂) combined. The NO₃ concentration is determined by analyzing for NO₃NO₂ and NO₂ and calculating NO₃ by the difference. An unpreserved bottle only has a 48 hour hold time for NO₃ and NO₂ separately. However if the bottle is preserved with sulfuric acid, the hold time for NO₃NO₂ is 28 days. The NO₂ was analyzed within 48 hours. The NO₃NO₂ was analyzed from a preserved container within 28 days..

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 73797
Approved By: Deanna Hesson

Dannat/sson

Certificate of Analysis

| | | |
|---------------------------------------|--------------------------------|------------------------------------|
| Sample #: L13101691-01 | PrePrep Method: N/A | Instrument: LCMS1 |
| Client ID: HTA 51-1013-1 | Prep Method: 6850 | Prep Date: 11/05/2013 20:30 |
| Matrix: Water | Analytical Method: 6850 | Cal Date: 11/06/2013 00:54 |
| Workgroup #: WG451629 | Analyst: JWR | Run Date: 11/06/2013 09:07 |
| Collect Date: 10/25/2013 09:55 | Dilution: 100 | File ID: 1LM.LM22541 |
| Sample Tag: DL01 | Units: ug/L | |

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|-------------|------------|--------|------|------|------|
| Perchlorate | 14797-73-0 | 30.5 | | 20.0 | 10.0 |

| | | |
|---------------------------------------|---------------------------------|------------------------------------|
| Sample #: L13101691-01 | PrePrep Method: N/A | Instrument: HPLC5 |
| Client ID: HTA 51-1013-1 | Prep Method: METHOD | Prep Date: 10/30/2013 09:01 |
| Matrix: Water | Analytical Method: 8330B | Cal Date: 08/31/2013 03:44 |
| Workgroup #: WG450871 | Analyst: JWR | Run Date: 11/06/2013 20:43 |
| Collect Date: 10/25/2013 09:55 | Dilution: 1 | File ID: 5L011579.F |
| Sample Tag: 01 | Units: ug/L | |

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|----------------------------|--|-------------|-------------|------|-------|
| 1,3,5-Trinitrobenzene | 99-35-4 | | U | 1.20 | 0.301 |
| 1,3-Dinitrobenzene | 99-65-0 | | U | 1.20 | 0.301 |
| 2,4,6-Trinitrotoluene | 118-96-7 | | U | 1.20 | 0.301 |
| 2,4-Dinitrotoluene | 121-14-2 | | U | 1.20 | 0.301 |
| 2,6-Dinitrotoluene | 606-20-2 | | U | 1.20 | 0.301 |
| 2-Amino-4,6-dinitrotoluene | 35572-78-2 | | U | 1.20 | 0.301 |
| 2-Nitrotoluene | 88-72-2 | | U | 1.20 | 0.301 |
| 3-Nitrotoluene | 99-08-1 | | U | 1.20 | 0.301 |
| 4-Nitrotoluene | 99-99-0 | | U | 1.20 | 0.301 |
| 4-Amino-2,6-dinitrotoluene | 19406-51-0 | | U | 1.20 | 0.301 |
| HMX | 2691-41-0 | | U | 1.20 | 0.301 |
| Nitrobenzene | 98-95-3 | | U | 1.20 | 0.301 |
| RDX | 121-82-4 | | U | 1.20 | 0.301 |
| Tetryl | 479-45-8 | | U | 1.20 | 0.301 |
| Nitroglycerin | 55-63-0 | | U | 1.20 | 0.301 |
| Surrogate | Recovery | Lower Limit | Upper Limit | Q | |
| 1,2-Dinitrobenzene | 96.0 | 50 | 150 | | |
| U | Analyte was not detected. The concentration is below the reported LOD. | | | | |

Certificate of Analysis

| | | |
|---------------------------------------|---------------------------------|------------------------------------|
| Sample #: L13101691-01 | PrePrep Method: N/A | Instrument: HPLC4 |
| Client ID: HTA 51-1013-1 | Prep Method: METHOD | Prep Date: 10/30/2013 09:01 |
| Matrix: Water | Analytical Method: 8330B | Cal Date: 11/15/2012 15:04 |
| Workgroup #: WG450871 | Analyst: ECL | Run Date: 10/30/2013 22:28 |
| Collect Date: 10/25/2013 09:55 | Dilution: 1 | File ID: 4L025799.F |
| Sample Tag: 02 | Units: ug/L | |

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|---------|--|--------|------|------|-------|
| PETN | 78-11-5 | | U | 1.20 | 0.301 |
| U | Analyte was not detected. The concentration is below the reported LOD. | | | | |

Certificate of Analysis

| | | |
|---------------------------------------|---------------------------------|-----------------------------------|
| Sample #: L13101691-01 | PrePrep Method: N/A | Instrument: SMARTCHEM |
| Client ID: HTA 51-1013-1 | Prep Method: 353.2 | Prep Date: N/A |
| Matrix: Water | Analytical Method: 353.2 | Cal Date: 10/29/2013 14:17 |
| Workgroup #: WG450787 | Analyst: BAF | Run Date: 10/30/2013 14:30 |
| Collect Date: 10/25/2013 09:55 | Dilution: 4 | File ID: SC13103112244401 |
| Sample Tag: | Units: mg/L | |

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|------------------------|-------|--------|------|-------|-------|
| Nitrate-Nitrite (as N) | | 4.09 | | 0.200 | 0.100 |

| | | |
|---------------------------------------|--------------------------------|------------------------------------|
| Sample #: L13101691-02 | PrePrep Method: N/A | Instrument: LCMS1 |
| Client ID: HTA 43-1013-1 | Prep Method: 6850 | Prep Date: 11/05/2013 20:30 |
| Matrix: Water | Analytical Method: 6850 | Cal Date: 11/06/2013 00:54 |
| Workgroup #: WG451629 | Analyst: JWR | Run Date: 11/06/2013 09:26 |
| Collect Date: 10/25/2013 11:45 | Dilution: 100 | File ID: 1LM.LM22542 |
| Sample Tag: DL01 | Units: ug/L | |

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|-------------|------------|--------|------|------|------|
| Perchlorate | 14797-73-0 | 40.3 | | 20.0 | 10.0 |

| | | |
|---------------------------------------|---------------------------------|------------------------------------|
| Sample #: L13101691-02 | PrePrep Method: N/A | Instrument: HPLC5 |
| Client ID: HTA 43-1013-1 | Prep Method: METHOD | Prep Date: 10/30/2013 09:01 |
| Matrix: Water | Analytical Method: 8330B | Cal Date: 08/31/2013 03:44 |
| Workgroup #: WG450871 | Analyst: JWR | Run Date: 11/06/2013 21:22 |
| Collect Date: 10/25/2013 11:45 | Dilution: 1 | File ID: 5L011580.F |
| Sample Tag: 01 | Units: ug/L | |

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|----------------------------|------------|--------|------|------|-------|
| 1,3,5-Trinitrobenzene | 99-35-4 | | U | 1.23 | 0.309 |
| 1,3-Dinitrobenzene | 99-65-0 | | U | 1.23 | 0.309 |
| 2,4,6-Trinitrotoluene | 118-96-7 | | U | 1.23 | 0.309 |
| 2,4-Dinitrotoluene | 121-14-2 | | U | 1.23 | 0.309 |
| 2,6-Dinitrotoluene | 606-20-2 | | U | 1.23 | 0.309 |
| 2-Amino-4,6-dinitrotoluene | 35572-78-2 | | U | 1.23 | 0.309 |
| 2-Nitrotoluene | 88-72-2 | | U | 1.23 | 0.309 |
| 3-Nitrotoluene | 99-08-1 | | U | 1.23 | 0.309 |
| 4-Nitrotoluene | 99-99-0 | | U | 1.23 | 0.309 |
| 4-Amino-2,6-dinitrotoluene | 19406-51-0 | | U | 1.23 | 0.309 |
| HMX | 2691-41-0 | | U | 1.23 | 0.309 |
| Nitrobenzene | 98-95-3 | | U | 1.23 | 0.309 |

Certificate of Analysis

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|--------------------|--|-------------|-------------|------|-------|
| RDX | 121-82-4 | | U | 1.23 | 0.309 |
| Tetryl | 479-45-8 | | U | 1.23 | 0.309 |
| Nitroglycerin | 55-63-0 | | U | 1.23 | 0.309 |
| Surrogate | Recovery | Lower Limit | Upper Limit | Q | |
| 1,2-Dinitrobenzene | 80.7 | 50 | 150 | | |
| U | Analyte was not detected. The concentration is below the reported LOD. | | | | |

Certificate of Analysis

| | | |
|---------------------------------------|---------------------------------|------------------------------------|
| Sample #: L13101691-02 | PrePrep Method: N/A | Instrument: HPLC4 |
| Client ID: HTA 43-1013-1 | Prep Method: METHOD | Prep Date: 10/30/2013 09:01 |
| Matrix: Water | Analytical Method: 8330B | Cal Date: 11/15/2012 15:04 |
| Workgroup #: WG450871 | Analyst: ECL | Run Date: 10/30/2013 22:47 |
| Collect Date: 10/25/2013 11:45 | Dilution: 1 | File ID: 4L025800.F |
| Sample Tag: 02 | Units: ug/L | |

| Analyte | | CAS # | Result | Qual | LOQ | LOD |
|---------|--|---------|--------|------|------|-------|
| PETN | | 78-11-5 | | U | 1.23 | 0.309 |
| U | Analyte was not detected. The concentration is below the reported LOD. | | | | | |

Certificate of Analysis

| | | |
|---------------------------------------|---------------------------------|-----------------------------------|
| Sample #: L13101691-02 | PrePrep Method: N/A | Instrument: SMARTCHEM |
| Client ID: HTA 43-1013-1 | Prep Method: 353.2 | Prep Date: N/A |
| Matrix: Water | Analytical Method: 353.2 | Cal Date: 10/29/2013 14:17 |
| Workgroup #: WG450787 | Analyst: BAF | Run Date: 10/30/2013 14:30 |
| Collect Date: 10/25/2013 11:45 | Dilution: 4 | File ID: SC13103112245001 |
| Sample Tag: | Units: mg/L | |

| Analyte | CAS # | Result | Qual | LOQ | LOD |
|------------------------|-------|--------|------|-------|-------|
| Nitrate-Nitrite (as N) | | 4.14 | | 0.200 | 0.100 |

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
November 13, 2013

| | |
|----------------------------------|--|
| 001 - BIO-CHEM TESTING WVDEP 220 | 002 - REIC Consultants, Inc. WVDEP 060 |
| 003 - Sturm Environmental | 004 - MICROBAC PITTSBURGH |
| ADC - ANTHONY D. CANTER | ADG - APRIL D. GREENE |
| AJF - AMANDA J. FICKIESEN | AML - TONY M. LONG |
| AZH - AFTER HOURS | BAF - BRICE A. FENTON |
| BJO - BRIAN J. OGDEN | BLG - BRENDA L. GREENWALT |
| BRG - BRENDA R. GREGORY | CAA - CASSIE A. AUGENSTEIN |
| CAF - CHERYL A. FLOWERS | CEB - CHAD E. BARNES |
| CLC - CHRYS L. CRAWFORD | CLS - CARA L. STRICKLER |
| CLW - CHARISSA L. WINTERS | CPD - CHAD P. DAVIS |
| CRW - CHRISTINA R. WILSON | CSH - CHRIS S. HILL |
| CTB - CHRIS T. BUCINA | DAK - DEAN A. K |
| DCM - DAVID C. MERCKLE | DDE - DEBRA D. ELLIOTT |
| DEV - DAVID E. VANDENBERG | DIH - DEANNA I. HESSON |
| DLB - DAVID L. BUMGARNER | DLP - DOROTHY L. PAYNE |
| DLR - DIANNA L. RAUCH | DSM - DAVID S. MOSSOR |
| ECL - ERIC C. LAWSON | EDL - ERIN D. LONG |
| ENY - EMILY N. YOAK | EPT - ETHAN P. TIDD |
| ERP - ERIN R. PORTER | FJB - FRANCES J. BOLDEN |
| HJR - HOLLY J. REED | JBK - JEREMY B. KINNEY |
| JDH - JUSTIN D. HESSON | JKS - JANE K. SCHAAD |
| JLL - JOHN L. LENT | JWR - JOHN W. RICHARDS |
| JWS - JACK W. SHEAVES | JYH - JI Y. HU |
| KDW - KATHRYN D. WELCH | KEB - KATIE E. BARNES |
| KHR - KIM H. RHODES | KRA - KATHY R. ALBERTSON |
| KRB - KAELY R. BECKER | KSC - KELLY S. CUNNINGHAM |
| LKN - LINDA K. NEDEFF | LLS - LARRY L. STEPHENS |
| LSB - LESLIE S. BUCINA | MBK - MORGAN B. KNOWLTON |
| MDA - MIKE D. ALBERTSON | MDC - MIKE D. COCHRAN |
| MES - MARY E. SCHILLING | MLW - MATTHEW L. WARREN |
| MMB - MAREN M. BEERY | MRT - MICHELLE R. TAYLOR |
| MSW - MATT S. WILSON | PDM - PIERCE D. MORRIS |
| PIT - MICROBAC WARRENDAL | PSW - PEGGY S. WEBB |
| QX - QIN XU | RAH - ROY A. HALSTEAD |
| REK - BOB E. KYER | RLB - BOB BUCHANAN |
| RM - RAYMOND MALEKE | RNP - RICK N. PETTY |
| RS - ROSEMARY SCOTT | RWC - RODNEY W. CAMPBELL |
| SAV - SARAH A. VANDENBERG | SEP - SUZANNE J. PAUGH |
| SLM - STEPHANIE L. MOSSBURG | SLP - SHERI L. PFALZGRAF |
| TMB - TIFFANY M. BAILEY | TMM - TAMMY M. MORRIS |
| TPA - TYLER P. AMRINE | VC - VICKI COLLIER |
| WJB - WILL J. BEASLEY | WTD - WADE T. DELONG |
| XXX - UNAVAILABLE OR SUBCONTRACT | |

Microbac Laboratories Inc.

List of Valid Qualifiers

November 13, 2013

Qualkey: DOD

| Qualifier | Description |
|-----------|---|
| * | Surrogate or spike compound out of range |
| + | Correlation coefficient for the MSA is less than 0.995 |
| < | Result is less than the associated numerical value. |
| > | Greater than |
| A | See the report narrative |
| B | The reported result is associated with a contaminated method blank. |
| B1 | Target analyte detected in method blank at or above the method reporting limit |
| B3 | Target analyte detected in calibration blank at or above the method reporting limit |
| B4 | The BOD unseeded dilution water blank exceeded 0.2 mg/L |
| C | Confirmed by GC/MS |
| CG | Confluent growth |
| CT1 | The cooler temperature at receipt exceeded regulatory guidelines for requested testing. |
| DL | Surrogate or spike compound was diluted out |
| E | Estimated concentration due to sample matrix interference |
| EDL | Elevated sample reporting limits, presence of non-target analytes |
| EMPC | Estimated Maximum Possible Concentration |
| F, S | Estimated result below quantitation limit; method of standard additions(MSA) |
| FL | Free Liquid |
| H1 | Sample analysis performed past holding time. |
| I | Semiquantitative result (out of instrument calibration range) |
| J | Estimated concentration; sample matrix interference. |
| J | Estimated value ; the analyte concentration was greater than the highest standard |
| J | Estimated value ; the analyte concentration was less than the LOQ. |
| J | The reported result is an estimated value. |
| J,B | Analyte detected in both the method blank and sample above the MDL. |
| J,P | Estimate; columns don't agree to within 40% |
| J,S | Estimated concentration; analyzed by method of standard addition (MSA) |
| JB | The reported result is an estimated value. The reported result is also associated with a contaminated method blank. |
| JQ | The reported result is an estimated value and one or more quality control criteria failed. See narrative. |
| L | Sample reporting limits elevated due to matrix interference |
| L1 | The associated blank spike (LCS) recovery was above the laboratory acceptance limits. |
| L2 | The associated blank spike (LCS) recovery was below the laboratory acceptance limits. |
| M | Matrix effect; the concentration is an estimate due to matrix effect. |
| N | Nontarget analyte; the analyte is a tentatively identified compound (TIC) by GC/MS |
| NA | Not applicable |
| ND | Not detected at or above the reporting limit (RL/MDL). |
| ND, CT1 | Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg |
| ND, H1 | Not detected; Sample analysis performed past holding time. |
| ND, L | Not detected; sample reporting limit (RL) elevated due to interference |
| ND, S | Not detected; analyzed by method of standard addition (MSA) |
| NF | Not found by library search |
| NFL | No free liquid |
| NI | Non-ignitable |
| NR | Analyte is not required to be analyzed |
| NS | Not spiked |
| P | Concentrations >40% difference between the two GC columns |
| Q | One or more quality control criteria failed. See narrative. |
| QNS | Quantity of sample not sufficient to perform analysis |
| RA | Reanalysis confirms reported results |
| RE | Reanalysis confirms sample matrix interference |
| S | Analyzed by method of standard addition (MSA) |
| SMI | Sample matrix interference on surrogate |
| SP | Reported results are for spike compounds only |
| TIC | Library Search Compound |
| TNTC | Too numerous to count |
| U | Analyte was not detected. The concentration is below the reported LOD. |
| UJ | Undetected; the MDL and RL are estimated due to quality control discrepancies. |
| UQ | Undetected; the analyte was analyzed for, but not detected. |
| W | Post-digestion spike for furnace AA out of control limits |
| X | Exceeds regulatory limit |
| X, S | Exceeds regulatory limit; method of standard additions (MSA) |
| Z | Cannot be resolved from isomer - see below |





CHAIN-OF-CUSTODY RECORD

[illegible]

**Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Internal Chain of Custody Report

Login: L13101691

Account: 3005

Project: 3005.011

Samples: 2

Due Date: 08-NOV-2013

Samplenum **Container ID** **Products**
L13101691-01 268929 8330-SPE

Bottle: 1

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|------|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | PREP | W1 | EXT | 29-OCT-2013 09:28 | CSH | RS | |
| 3 | PREP | W1 | EXT | 30-OCT-2013 08:25 | CSH | RS | |
| 4 | DISP | EXT | DISP | 31-OCT-2013 07:09 | RLB | RLB | |
| 5 | ANALYZ* | EXT | SEMI | 31-OCT-2013 16:14 | JWR | CSH | |

**Sample extract/digestate/leachate*

Bottle: 2

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|----|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | STORE | W1 | A1 | 31-OCT-2013 16:53 | RS | RS | |

**Sample extract/digestate/leachate*

Samplenum **Container ID** **Products**
L13101691-01 268930 6850

Bottle: 1

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|-----|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | ANALYZ | W1 | SEM | 05-NOV-2013 15:46 | JWR | RS | |
| 3 | STORE | SEM | A1 | 07-NOV-2013 10:24 | CLS | JWR | |

Samplenum **Container ID** **Products**
L13101691-01 268931 NO3NO2

Bottle: 1

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|-----|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | ANALYZ | W1 | WET | 30-OCT-2013 11:51 | BAF | RS | |
| 3 | STORE | WET | A1 | 30-OCT-2013 16:22 | RS | DCM | |

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login



Internal Chain of Custody Report

Login: L13101691

Account: 3005

Project: 3005.011

Samples: 2

Due Date: 08-NOV-2013

Samplenum **Container ID** **Products**
L13101691-02 268932 8330-SPE

Bottle: 1

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|------|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | PREP | W1 | EXT | 29-OCT-2013 09:28 | CSH | RS | |
| 3 | PREP | W1 | EXT | 30-OCT-2013 08:25 | CSH | RS | |
| 4 | DISP | EXT | DISP | 31-OCT-2013 07:09 | RLB | RLB | |
| 5 | ANALYZ* | EXT | SEMI | 31-OCT-2013 16:14 | JWR | CSH | |

**Sample extract/digestate/leachate*

Bottle: 2

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|----|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | STORE | W1 | A1 | 31-OCT-2013 16:53 | RS | RS | |

**Sample extract/digestate/leachate*

Samplenum **Container ID** **Products**
L13101691-02 268933 6850

Bottle: 1

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|-----|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | ANALYZ | W1 | SEM | 05-NOV-2013 15:46 | JWR | RS | |
| 3 | STORE | SEM | A1 | 07-NOV-2013 10:24 | CLS | JWR | |

Samplenum **Container ID** **Products**
L13101691-02 268934 NO3NO2

Bottle: 1

| Seq. | Purpose | From | To | Date/Time | Accept | Relinquish | pH |
|------|---------|--------|-----|-------------------|--------|------------|----|
| 1 | LOGIN | COOLER | W1 | 28-OCT-2013 13:07 | CLS | | |
| 2 | ANALYZ | W1 | WET | 30-OCT-2013 11:51 | BAF | RS | |
| 3 | STORE | WET | A1 | 30-OCT-2013 16:22 | RS | DCM | |

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

